

GISMO IS BACK!

We've made our popular robot even easier to build. Meet GISMO 3.

IN 1956, *Boys' Life* readers met "Gismo the Great," a lanky robot they could make from scratch.

In February 1987, we showed how to build a more modern fellow, GISMO2BL. Thousands of little robots resulted.

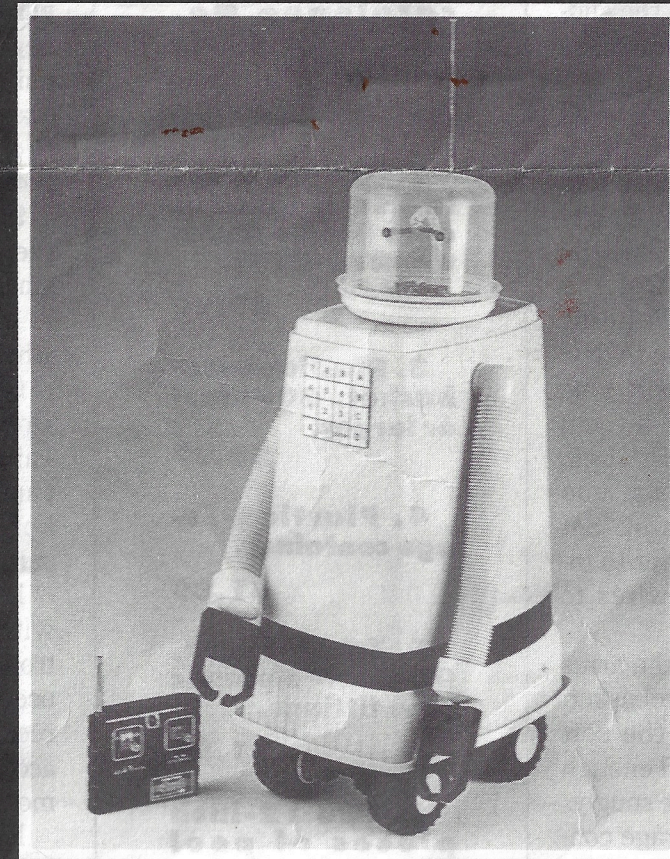
Now meet the newest member of the GISMO clan, GISMO 3. He is the easiest to build yet, because he sits atop the chassis of a radio-controlled toy truck. There are no motors to wire, and no control cables to mess with.

GISMO 3 is remote-controlled and wicked quick. You can direct his moves from up to 70 feet away.

The basic robot can be built for about \$60. He will cost even less if you can find parts around the house.

GISMO 3's head is a clear plastic food-storage container. He has red lights for eyes. His body is a durable plastic wastebasket. His arms consist of flexible hose. For hands, we used ribbon cartridges from a computer printer.

The heart of GISMO 3 is a radio-controlled truck chassis, including motor and wheels. Choose a truck with four-wheel



Watch your toes. GISMO 3 is radio-controlled. And he's on a roll! Basic GISMO 3 is shown above. The version on the opposite page is "GIS" after an artist added some robot styling. Show us the kind of GISMO you can create.

drive. It will have a rugged motor and good traction.

We used the Radio Shack "Off-Roader." With high ground clearance and big tires, it runs well even on carpet. Other r/c trucks will work too; note that eye and switch wiring may vary from that shown on page 27.

What can GISMO 3 do? The only limits are your imagination, skill and budget.

Give GISMO 3 a high-tech look by installing an old circuit board under his clear dome. It will be his electronic "brain." Or try a metallic look, as our artist did (opposite), with

some kitchen utensils. Mount a tray on GISMO so he can carry things.

A tape player or walkie-talkie hidden inside will give GISMO 3 the gift of gab.

Let's Start Building

1. Buy a radio-controlled truck. Add batteries. Test-drive the truck before you remove the chassis. Stores may not honor the warranty afterward.

2. Remove the screws that hold the truck body to the chassis. Carefully lift off the body, work-

PHOTOGRAPHS BY ROGER MORGAN,
GISMO STYLED BY RAY MEL CORNELIUS

ing the antenna wire through the hole. (On the Off-Roader, you must remove the winch assembly first. Don't forget the screws in the cargo bed.) Save body parts and screws.

3. Remove the screw that holds the on/off switch to the chassis. Move this switch to the right side of the chassis, facing down, where it will be easy to reach. Glue the side of the switch to the chassis with a small amount of epoxy. Don't get glue on the sliding part. Tape or clamp in place and let dry.

4. Center the 2-by-2-inch wood blocks and chassis, wheels up, on the wastebasket body. Mark and cut the blocks so they fit snugly inside the wastebasket. Glue the blocks to the flat part of the wheel wells. Check the fit inside the basket, then set aside to dry.

5. Build the arms. Apply glue inside the hoses and push them onto the plastic pipe fittings. Twist gently to work them into place; it will be a tight fit. Set aside to dry. You may want to insert bent coat hanger wires to stiffen the hoses.

6. Mark locations for the arms on the sides of the wastebasket. Carefully cut holes in the soft plastic. Make them small enough for the pipe fittings to fit snugly.

7. Center the food-storage container's lid on the bottom of the wastebasket. Use an awl or drill to make a hole through both. Attach the lid with a nut, bolt, and two washers. Make a second hole to wire the eyes.

8. This step is optional because "GIS" doesn't need eyesight to motor around. But if your truck has an on/off indicator light or headlights, a bit of simple wiring can give your robot glowing eyes. Here's how to do it using the Off-Roader: Remove the on/off indicator light from the chassis and cut the orange and purple wires close to the light. Next, prepare two 40-inch lengths of wire for

GISMO'S PARTS

1. Chassis from a radio-controlled truck or tank. (We used the Radio Shack Off-Roader, catalogue No. 60-4067 or 60-4057.)

\$47.95

2. Two red snap-in LED lights for eyes (Radio Shack No. 276-018).

\$1.99

3. Plastic wastebasket, 20-quart or larger.

\$3.97

4. Plastic storage container.

\$1.89

5. Two 1 1/4-inch, 90-degree plastic pipe fittings.

\$1.59

6. Two 12-inch pieces of pool hose.

\$1.00

TOTAL: \$58.39

You'll also need two one-foot lengths of 2-by-2-inch lumber, alkaline batteries, screws, wire, epoxy glue, tape, and solder or small wire nuts.

each eye. Strip 1/4 inch of insulation off the wire ends. Solder the wires to the LED eyes. (See diagram.)

Mark locations on the clear container for the eyes, and carefully drill holes. Route the wires through the holes, and press the LED's gently until they snap in place. Run the wires through the "neck" hole and into the body. Snap the head in place.

Now, attach the positive eye wires to the purple wire, and the negative wires to the orange wire using wire nuts or solder. (See diagram. The positive wires are those attached to the longer prongs on the LED "eyes.")

9. Mount the wastebasket to the chassis's wooden blocks with small wood screws. Be sure there is enough clearance for the wheels to turn and move freely.

GISMO 3 is now complete. Dress him up however you like. Paint him. Glue on some plastic parts to make him look more robotic. You may want to add a cargo compartment.

If you have some experience with electronics or radio-controlled vehicles, you may want to use the switching circuits in the receiver board to operate other accessories such as lights, buzzers, moving arms, or a speaker.

For more on building robots, check your library for these books: "The Personal Robot Book" by Texe Marrs, "Robots and the Intelligent Computer" by David J. Darling, "Robots and Robotics" by Margaret Baldwin and Gary Peck, and "Build Your Own Working Robot" by David Heiserman.

If you build GISMO 3, send a color photograph along with a brief description to "My GISMO 3," *Boys' Life*, P.O. Box 152079, Irving, TX 75015-2079. We'll feature some in a later issue. Come on, guys. Let's see how creative you can be.✦

—Mark Haverstock

ROBOT ASSEMBLY

